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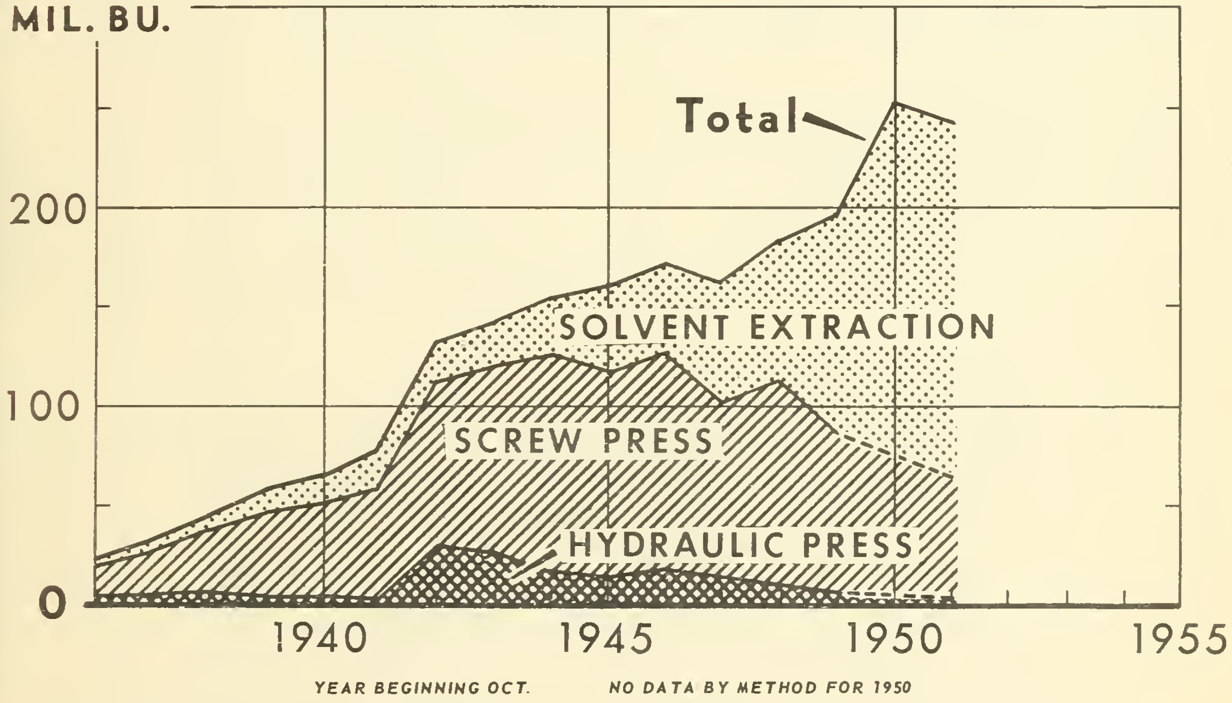
THE Fats and Oils SITUATION

BUREAU OF AGRICULTURAL ECONOMICS
UNITED STATES DEPARTMENT OF AGRICULTURE

FOS-162 BAE AUGUST-SEPTEMBER 1953

SOYBEANS CRUSHED, BY METHOD OF PROCESSING



U. S. DEPARTMENT OF AGRICULTURE NEG. 48994-XX BUREAU OF AGRICULTURAL ECONOMICS

In recent years solvent extraction has become the most important method used to process soybeans. A similar shift apparently is now taking place in cottonseed processing. The economic implications of this trend are important for producers and processors of oilseeds as well as for users of fats and oils. A change in the technical basis of the processing industry tends to affect the price received by farmers for oilseeds both by causing changes in the value (price times quantity) of the products obtained in processing and in processing costs.

AUG 3 1 1953
U. S. DEPARTMENT OF AGRICULTURE

Table 1.- Wholesale prices per pound for fats, oils, and glycerin at specified markets

Item	July		1953		
	1951	1952	May	June	July
	Cents	Cents	Cents	Cents	Cents
Babassu oil, tanks, New York	16.0	---	---	---	---
Butter, creamery, Grade A (92-score) bulk, New York	67.3	71.6	65.8	65.6	65.6
Butter, creamery, Grade B, (90-score) bulk, Chicago	66.0	69.8	63.0	63.0	63.0
Castor oil, dehydrated, tanks, New York	38.8	33.3	29.1	28.4	27.5
Castor oil, No. 1, tanks, f.o.b. New Jersey mills	33.7	28.2	24.0	23.2	22.4
Castor oil, No. 3, technical, drums, carlots, f.o.b. N.Y.	34.4	29.3	24.8	24.0	23.2
Coconut oil, crude, tank cars, Pacific Coast, f.o.b. mill 1/	15.4	13.1	18.1	17.3	17.7
Coconut oil, crude, tanks, Atlantic ports (tax included)	16.4	13.8	19.4	19.0	19.2
Coconut oil, Cochin type, refined, drums, N.Y. (tax included)	20.8	17.9	24.4	22.8	22.8
Cod oil, Newfoundland, drums, New York	15.0	11.5	10.0	10.0	10.0
Codliver oil, medicinal, U.S.P., barrels, New York	25.4	20.2	20.2	20.2	20.2
Corn oil, crude, tank cars, f.o.b. Midwest mills	14.0	12.6	14.4	14.1	13.7
Corn oil, refined, drums, New York	20.8	18.5	19.5	19.5	17.0
Cottonseed oil, crude, tank cars, f.o.b. S.E. mills	14.6	12.6	14.8	15.0	14.0
Cottonseed oil, p.s.y., bleachable, tank cars, New York 2/	16.8	14.7	16.5	15.8	15.1
Cottonseed-oil foots, raw (50 percent T.F.A) delivered East	2.2	1.3	1.1	1.4	1.3
Cottonseed oil, refined, drums, New York	24.1	20.5	23.2	23.2	22.5
Degras, common, barrels, New York	13.8	11.0	17.0	17.0	17.0
Glycerin, soaplye, basis 80 percent, tanks, New York	41.0	22.0	30.5	30.5	30.5
Grease, A white, tank cars, f.o.b. Chicago	7.5	5.5	4.1	3.5	3.9
Grease, yellow, tank cars, f.o.b. Chicago	6.1	3.9	3.3	2.8	2.7
Lard, loose, tank cars, Chicago	15.4	10.0	10.4	9.6	11.7
Lard, prime steam, tierces, Chicago	16.6	11.5	10.6	9.3	10.8
Lard, refined, 1-pound cartons, Chicago	18.8	14.9	14.4	13.8	15.2
Linseed oil, raw, tank cars, Minneapolis	15.1	15.0	15.0	14.5	13.8
Linseed oil, raw, drums, carlots, New York	16.9	17.9	17.7	17.3	16.8
Margarine, white, domestic vegetable, Chicago	30.0	27.0	27.2	26.5	27.0
Menhaden oil, light pressed, tanks, New York	14.6	11.0	11.0	10.8	10.0
Neat's-foot oil, 30°, drums, carlots, New York	34.5	29.8	30.0	30.0	30.0
Oiticica oil, drums, f.o.b. New York	29.7	24.6	25.0	25.0	24.7
Oleo oil, extra, drums, New York	23.5	15.0	12.7	13.0	13.7
Oleostearine, barrels, New York	14.8	14.5	7.4	8.0	8.0
Olive oil, imported, edible, drums, New York	37.1	28.7	36.5	36.7	35.9
Olive oil foots, domestic, drums, carlots, New York	18.4	16.0	15.0	15.0	15.0
Palm oil, Congo, drums, f.o.b. New York 3/	24.2	13.0	11.8	12.0	11.7
Peanut oil, crude, tank cars, f.o.b. S.E. mills	16.5	15.9	22.3	20.9	19.3
Peanut oil, refined, drums, New York	22.4	25.0	32.0	32.0	32.0
Rapeseed oil, refined (denatured), tanks, New York	25.5	18.8	17.2	17.2	17.0
Sardine oil, crude, tanks, Pacific Coast	10.2	---	---	---	---
Sesame oil, refined, drums, New York	38.5	37.0	36.0	36.0	36.0
Soybean oil, crude, tank cars, f.o.b. Midwest mills	14.5	11.3	12.3	11.5	10.2
Soybean oil, refined, drums, New York	19.9	17.3	20.8	20.8	20.1
Shortening, containing animal fat, 1-pound cartons, Chicago	30.9	24.5	27.8	27.8	27.8
Shortening, cottonseed, hydrogenated, 10-drum lots, New York	26.2	21.2	23.2	22.8	22.2
Sperm oil, natural, 45°, drums, New York	18.8	15.1	13.0	13.0	12.8
Tall oil, refined, tanks, works	5.8	5.2	5.0	5.0	5.0
Tallow, edible, loose, Chicago	10.8	7.7	5.3	5.9	6.4
Tallow, inedible, packers' prime, tank cars, f.o.b. Chicago	9.4	5.7	3.9	3.6	3.7
Tallow, No. 1, inedible, Chicago	7.1	4.4	3.5	3.0	3.0
Tung oil, imported, drums, carlots, f.o.b. New York	38.9	40.9	30.3	29.9	29.6
Tung oil, tanks, New York	36.9	39.4	28.8	28.2	28.0

1/ Three-cent processing tax added to prices as originally quoted.

2/ Near-by futures.

3/ Tax excluded. Tax does not apply to palm oil used in the manufacture of iron or steel products, tin and terne plate. Since 1943 these are the major uses of palm oil.

Prices compiled from Oil, Paint, and Drug Reporter; The National Provisioner; The Journal of Commerce (New York); Wall Street Journal, Chicago edition; reports of Bureau of Labor Statistics, and reports of Production and Marketing Administration. Excise taxes and duties included where applicable.

THE FATS AND OILS SITUATION

Approved by the Outlook and Situation Board, August 19, 1953

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SUMMARY AND OUTLOOK

Total stocks of soybeans on July 1, 1953 were estimated at 61.9 million bushels. This was about 17 million bushels more than reported for a year earlier. However, this actual difference probably was smaller because total disposition of beans during the July-September period of 1952, indicates that reported stocks on July 1 of that year were somewhat low even after allowing for such unknown factors as the quantity of new crop beans crushed prior to October 1. Also, about 3 million bushels of 1952 crop soybeans were in CCC inventory in early August compared with a negligible quantity the year before. None of the beans owned by CCC are available to domestic processors except at a price about 15 to 20 cents per bushel above the current market level. The Corporation is offering these beans for export at the market price on date of sale, and for domestic use at the market price or 1952 support level, whichever is higher.

Demand for soybean oil is likely to be strong through September since the CCC owns nearly all the cottonseed oil. Since July 1, 1953 exports of soybeans have been at a rate double last year's level, when the total for the summer quarter was 2.7 million bushels. When the 1952-53 season ends next September 30, stocks of soybeans may be only slightly larger than the usual 3 or 4 million bushels.

Production of edible fats and oils in the year beginning October 1, 1953 is likely to be moderately less than in the present crop year. However, total supplies will be somewhat greater as larger beginning stocks of vegetable oils and butter will more than offset the drop in output. Most of the decine in output will be in animal fats, with little change in edible vegetable oils.

The 1953 soybean crop, on the basis of reports as of August 1, is estimated at 295 million bushels. This is 3 million bushels more than last year. Acreage increased slightly to the highest of record.

If the ratio of lint to cottonseed is the same as the average for the past five years, production of cottonseed would be 5,970 thousand tons, 3 percent less than in 1952. The drop would be somewhat smaller than the decline in acreage, indicating an increase in yield.

Reflecting a drop in the 1953 pig crops, production of lard in 1953-54 probably will decline more than 5 percent from the 2,550 million pounds likely to be produced in the current crop year. Stocks of lard on October 1, 1953 also will be less than on the same date a year earlier. Output of butter in the year beginning October 1, 1953 most likely will be smaller than in the present crop year.

Production of peanuts is estimated at 1,377 million pounds, 23 million more than last year. A 4 percent increase in acreage was partly offset by a small drop in yield from last year's record level. The 1953 crop will provide somewhat more than sufficient peanuts to meet domestic requirements for edible and farm uses. With about the same size crop last year, over 100 million pounds were acquired by CCC under the support program. Stocks of peanuts on August 1, 1953 are substantial but about 40 percent are owned by CCC.

Output of 1953 crop flaxseed is placed at 42 million bushels, 11 million more than last year. A crop of this size will be more than adequate to meet all needs for flaxseed and linseed oil. Also, beginning stocks of flaxseed and linseed oil are equal to over a year's requirements. It is likely that a substantial portion of the crop will be delivered to CCC. About 5 million bushels of 1952 crop flaxseed were acquired by CCC.

RECENT DEVELOPMENTS

Smaller Commercial Supplies of Edible Oils Available

Production of edible vegetable oils in the first 9 months of the current crop year has been somewhat greater than a year earlier. Stocks at the beginning of the current year also were larger. Total disappearance has been slightly less than the year before, with a moderate drop in exports (including oil equivalent of soybeans) more than offsetting a small increase in domestic use. In general, Europe, Mexico, and Canada have taken less oils while shipments of soybeans to Japan increased sharply.

Stocks of edible vegetable oils on July 1, 1953 totaled about 1,300 million pounds, of which about 350 million pounds were commercial stocks and the rest were owned by CCC. A year earlier, commercial stocks totaled 650 million pounds. Production of these oils in July-September 1953 probably will be up about 10 to 15 percent from last year's total of 855 million pounds (including the oil equivalent of exported soybeans). However, total disappearance is likely to be large enough to reduce stocks during this quarter. Consequently, some tightness in commercial supplies may develop before new crop oil becomes available in quantity.

Reduced Supplies of Lard in Prospect

Total supplies of lard in October 1952-June 1953 were 9 percent less than a year earlier, mainly reflecting a 10 percent drop in the pig crops and reduced yield per hog slaughtered. (Stocks at the beginning of the crop year were substantially greater than a year earlier.) Total disappearance also declined but not as much as production. Consequently, lard stocks on

Table 2.- Oil crops, including peanuts: Yield per acre and production

Item	Unit	Average 1937-41	1949	1950	1951	1952	1953 1/
				YIELD PER ACRE			
Cottonseed 2/	Pounds	420	470	447	448	459	485
Soybeans 3/	Bushels	18.7	22.3	21.7	20.9	20.7	20.6
Flaxseed 4/	Bushels	8.9	8.0	9.4	8.4	9.0	9.1
Peanuts 2/	Pounds	767	808	898	834	928	908
				PRODUCTION			
Cottonseed	1,000 tons	5,500	6,599	4,105	6,286	6,176	6/5,970
Soybeans	Mil. bushels	78.0	234.2	299.3	282.5	291.7	295.0
Flaxseed	Mil. bushels	19.6	43.0	40.2	34.7	31.0	42.2
Peanuts	Mil. pounds	1,395	1,865	2,037	1,676	1,354	1,377

1/ Indicated August 1, 1953.
2/ In cultivation. 3/ Harvested for beans. 4/ Planted. 5/ Picked and threshed.
6/ Calculated from the August indication of 1953 cotton lint production and the 1948-52 average ratio between production of cottonseed and cotton lint.

Table 3.- Estimated production of fats and oils from domestic materials and oil equivalent of exported domestic oilseeds, year beginning October 1953 with comparisons

Item	Average 1937-41	1949	1950	1951	1952 1/	1953 2/
	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.	Mil. lb.
Butter (actual weight)	2,220	1,701	1,472	1,403	1,650	
Lard	2,091	2,626	2,811	2,920	2,550	2,400
Edible beef fats	225	168	158	173	215	200
Total, edible animal	4,536	4,495	4,441	4,496	4,415	
Corn oil	173	242	243	223	250	250
Cottonseed oil	1,456	1,795	1,227	1,722	1,775	1,700
Peanut oil 3/	87	217	211	123	50	75
Soybean oil 3/	531	2,065	2,726	2,611	2,900	2,900
Total edible vegetable	2,247	4,319	4,406	4,678	4,975	4,925
Inedible tallow and greases	1,303	2,150	2,343	2,269	2,500	2,350
Linseed oil 3/	361	775	687	608	525	650
All others 4/	249	211	206	176	200	200
Grand total	8,696	11,950	12,083	12,227	12,615	

1/ Partly estimated. 2/ Forecast based on August crop report and other indications.
3/ Including oil equivalent of seed exported for crushing abroad. 4/ Mainly fish, marine, tung and castor oils.

July 1, 1953 totaled 169 million, 46 million less than the year before. The entire decline in disappearance was in exports, as domestic use was up slightly. Reduced shipments to the United Kingdom, the Netherlands, Cuba and Mexico accounted for most of the drop. Currency difficulties limited exports to the United Kingdom while increased domestic production in Mexico reduced the need for imports by that country. Cuban consumer demand for lard apparently has declined due to some reduction in the general level of economic activity.

Production in July-September 1953 is likely to be down about 15 percent from last year while total disappearance probably will not decline as much. Hence a further reduction in stocks is in prospect and stocks on October 1 may be around half last year's level of 143 million pounds. Prices of lard have been rising, reflecting the tightening of supplies.

CCC Acquires Large Stocks of Butter

Supplies of butter in October 1952-June 1953 were 20 percent larger than a year earlier, reflecting a sharp increase in output. The flow of milk has been heavy since last fall (farmers have kept more cows and output per cow has been at a record level) and most of the excess has been channeled into butter production. As there was little change in disappearance of butter, stocks increased substantially and on July 1, 1953 totaled 257 million pounds compared with 69 million the year before. This is the most for that date. However, of the total, CCC owned 199 million pounds.

From last fall through August 15, CCC purchased 344 million pounds of butter as a support operation and prices have been at the support level. Through mid-August, CCC disposed of 77 million pounds--51 million to school lunch programs and other eligible domestic outlets, such as welfare and charitable organizations, 15 million sold to the Defense Department and 11 million to approved welfare agencies for distribution to needy persons here and abroad--leaving about 266 million pounds in CCC ownership. An additional 23 million pounds are expected to be taken by the school lunch programs and other eligible domestic outlets. Also, 39 million pounds remain for distribution to eligible domestic or export outlets. Production of butter in July-September 1953 is expected to be up 5 to 10 percent from last year and further CCC purchases are likely.

Large Supplies of Domestic Nonfood Oils

Output of inedible tallow and greases in the first 9 months of the October 1952-September 1953 year totaled about 1,950 million pounds, 13 percent more than last year. Domestic disappearance of 1,170 million pounds was about the same as the year before but exports, at about 735 million pounds were up 35 percent, reflecting low prices. Stocks also increased.

Domestic disappearance of linseed oil in the crop year that ended on July 1, 1953 totaled 560 million pounds, 26 million less than the year before. Production, at 507 million pounds was down 102 million from the previous year. With output less than consumption, stocks declined but (at 619 million pounds) still were equal to a year's requirements. Government holdings total nearly 490 million pounds.

U. S. Consumption of Coconut Oil Increases; World Exports Decline

Consumption of coconut oil in the U. S. in the first 6 months of 1953 has been somewhat greater than last year but stocks are lower. U. S. prices of coconut oil rose sharply from a low point of 10.8 cents per pound (crude, tank cars, Pacific Coast, 3 cent tax included) in the spring of 1952, reaching a peak of nearly 23 cents in March of 1953. Prices then declined to about 17 cents by June and have remained around this level.

Exports of coconut oil and the oil equivalent of copra from the major exporting areas in January-June 1953 were down about 30 percent from the year before. In general, this reflected adverse weather conditions and a disease which affects the trees. Exports to the United States in this period were somewhat greater than a year earlier. Exports for the second half of 1953 probably will continue below last year's level.

Table 4.- Wholesale price per pound of leading fats and oils
United States, specified periods

Item	Average 1937-41	August 1951	August 1952	1953 May	1953 June	1953 July 1/	1953 Mid-August
	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Butter, 92-score, Chicago	29.6	66.4	72.8	65.1	65.1	65.1	65.1
Lard, tank carlots, Chicago	7.6	16.6	9.2	10.4	9.6	11.7	14.5
Cottonseed oil, crude, S.E. mills	7.0	15.4	13.2	14.8	15.0	14.0	13.0
Soybean oil, crude, tank cars, Midwest mills	6.4	15.4	11.5	12.3	11.5	10.2	10.7
Coconut oil, crude, tank cars, Pacific Coast 2/	7.0	16.2	12.3	18.1	17.3	17.7	17.2
Inedible tallow, prime, Chicago	6.3	9.0	5.5	3.9	3.6	3.7	3.9
Linseed oil, raw, tank cars, Minneapolis	9.3	14.1	15.2	15.0	14.5	13.8	14.0
Tung oil, tanks, New York	3/21.7	34.7	38.4	28.8	28.2	28.0	28.0

1/ Preliminary.
2/ Three cents added to allow for tax on first domestic processing.
3/ Drums, New York.

Compiled from Oil, Paint, and Drug Reporter, The National Provisioner, Wall Street Journal, Chicago edition, and reports of Production and Marketing Administration.

Support Prices Announced for Various Types of Peanuts

Price support levels by types and areas for 1953 crop peanuts, based on a national average of $237.60 per ton, were announced on July 27. These prices are based upon 90 percent of parity at the beginning of the marketing year (August 1).

Prices to producers for farmers' stock peanuts will be supported by means of farm and warehouse storage loans, purchase agreements and through loans to approved cooperatives. Loans will be available from time of harvest through January 31, 1954, and will mature May 31, 1954 or earlier on demand by CCC.

Peanuts containing more than 12 percent foreign material or more than 8 percent damaged kernels will not be eligible for price support. To be eligible for farm storage loans, peanuts must not contain more than 10 percent moisture.

About 100 million pounds of 1952 crop farmers' stock peanuts were acquired by CCC under the support program.

Table 5.- Support price per ton for base-grade merchantable farmers' stock peanuts, 1952 and 1953 crop

Type	Sound mature kernel content	Support price for 1/ 1952 crop	Support price for 1/ 1953 crop
	Percent	Dollars	Dollars
Spanish and Valencias			
East of Mississippi River	70	2/236	2/234
West of Mississippi River	70	2/232	2/230
Virginias	65	231	229
Runners	65	215	213

1/ Premiums or discounts are added or deducted for each one percent of sound mature kernel content above or below the base grade content. Premiums and discounts are also applied for variations in damage, and foreign material.

2/ Valencias, other than those suitable for cleaning and roasting. Support for Valencias containing 65 percent sound mature kernels suitable for cleaning and roasting are as follows: 1952 crop - $231; 1953 crop - $229.

Domestic Production of Castor Beans is Expanding

During 1951, the USDA, at the request of the Munitions Board, undertook a program to encourage domestic production of castor beans. This program was continued in 1952 and again in the present year.

Production of 1952 crop beans is estimated at 25 million pounds, hulled basis, 4 million more than the year before. Although planted acreage increased over 40 percent, the national average yield was down about 25 percent. The lower yield reflected a substantial shift from the high yielding irrigated areas in California and Arizona to lower yielding dry-land sections in Texas. On a State basis, yields were higher than in 1951. Harvested acreage comprised 81 percent of planted acreage in 1952 compared with 75 percent the year before.

Producers in Texas apparently were satisfied with their 1951 crop and sharply expanded planted acreage in 1952. Acreage in Oklahoma, California, and Arizona declined. The declines in California and Arizona apparently reflect dissatisfaction with the 1951 crop and competition from cotton.

Despite drought and early frost in Texas and Oklahoma, yields in 1952 averaged higher than the year before. Increasing "know-how" on the part of producers and shifts to areas better adapted for castor beans contributed to the higher yields. Yields in California and Arizona also were better than in 1951. In both States, the weather was favorable (in contrast to adverse conditions in 1951) for production of beans. Also, in California, use of hybrid seed and concentration of plantings in the San Joaquin area were factors in the increased yield. In Arizona, a change in cultural practices in 1952 tended to increase yields. Instead of planting their beans in April (as they did in 1951) producers planted them in June, after the small grains were harvested. This shortened the growing season which reduced the number of capsules that dropped from the plants.

Prices paid farmers by CCC for 1951 crop castor beans grown under contract with the Corporation or its representative were to be 10 cents per pound, hulled basis, or the market price at time of delivery, whichever was higher. From this was to be subtracted 0.5 cents per pound, hulled basis, for hulling the beans where hulling was performed for the farmers. Prices actually received by farmers ranged from 10.5 to 12 cents per pound. For the 1952 crop the minimum guarantee price also was 10 cents per pound. Producers received the minimum guarantee price for their 1952 crop beans as prices of imported beans generally were lower than the guaranteed price.

Plantings of 1953 crop castor beans are estimated at over 140,000 acres, or about 20,000 more than the year before. Most of the increase is in Oklahoma but all the other States also reported greater plantings. Four factors probably will contribute to higher yields in 1953.

(1) The introduction of a new hybrid variety in California and in the high plains of Texas and the partial replacement of the variety known as Conner by Cimmarron in Texas and Oklahoma. (Increased availability of the hybrid variety in 1954 will enable producers to plant more of this higher yielding seed.) (2) Growing conditions are as good or better than last year. (3) Producers are shifting to land better adapted to castor beans and (4) are giving more care to the crop. During the first year or two, producers apparently thought that castor beans were a poor land crop. Also, they thought that castor beans could not compete with other crops for the better land. Experience with the past two crops appears to have changed their minds to some extent. The minimum guarantee for the 1953 crop was reduced from the previous 10 cents to 9 cents per pound, hulled basis. Prices received by growers are not likely to be above the guarantee level. In July 1953, Brazilian castor beans landed at New York were quoted at about 7.5 cents per pound.

Table 6.- Castor beans: Estimated acreage and production from 1951 and 1952 crops

Area	Acreage				Production, hulled basis		Yield per acre harvested	
	Planted 1/		Harvested					
	1951	1952	1951	1952	1951	1952	1951	1952
	1,000 acres	1,000 acres	1,000 acres	1,000 acres	Mil. lb.	Mil. lb.	Lb.	Lb.
Texas 2/	27.7	91.9	19.5	72.2	2.6	17.5	135	242
Oklahoma 2/	30.5	25.1	24.3	23.6	3.3	4.9	137	208
California (Irrigated)	20.4	1.7	15.1	1.3	11.4	1.6	756	1,218
Arizona (Irrigated)	5.0	.9	3.8	.5	3.4	.4	905	982
Arkansas	3/	.4	3/	N.A.	4/	.1	430	N.A.
Total	83.7	120.1	62.7	97.6	20.8	24.6	332	252

1/ Estimate based on sales of seed.
2/ Mostly dry land but does include some irrigated areas.
3/ Less than 50 acres.
4/ About 15,000 pounds. N. A. - Not available.

Totals computed from unrounded numbers.
Compiled by the Fats and Oils Branch, PMA, USDA.

EFFECT OF CHANGES IN METHOD OF OILSEED PROCESSING ON RETURNS TO PRODUCERS

by

Martin S. Simon, BAE

In recent years there has been an increasing trend on the part of oilseed processors toward the adoption of more efficient methods of oil extraction. The economic implications of this development are important for the producer of oilseeds as well as for the processor. The central purpose of this article is to show the way in which the producer is affected. It is based largely on three reports issued recently by the United States Department of Agriculture.1/ First, however, it may be well to indicate briefly the type and degree of change in processing method that has been occurring.

1/ These reports are: (1) U. S. Department of Agriculture Technical Bulletin No. 1068 by Sidney J. Armore, entitled *The Demand and Price Structure for Food Fats and Oils*; (2) Marketing Research Report No. 35 by Martin S. Simon, entitled *Soybeans: Economic Analyses Relating to Processing*; and (3) Agriculture Information Bulletin No. 103 by John M. Brewster, entitled *Cottonseed Oil Mills: Their Comparative Efficiencies and Effects on Prices and Producers' Returns*. The latter is a summary of Marketing Research Report No. 54 by John M. Brewster, entitled *Comparative Economies of Different Types of Cottonseed Oil Mills and Their Effects on Oil Supplies, Prices, and Returns to Growers*, to be issued in October.

The shift in method of processing has proceeded furthest in the soybean processing industry. (See cover chart.) The quantities of soybeans processed by the solvent extraction method rose from 28 percent of the total crush in 1945-46 to 74 percent in 1951-52. Prior to 1949-50, screw presses, which processed only 25 percent in 1951-52, were used to handle most of the soybean crush. Hydraulic presses accounted for the remainder in each year. Similar data for other oilseeds are not available prior to 1951-52. For that year 12 percent of the cottonseed crush was handled by the solvent and prepress-solvent methods and 31 percent of the flaxseed was processed by the prepress-solvent method. [2]

Relative efficiencies of the various methods of processing in oil recovery for soybeans, cottonseed, and flaxseed can be shown from the available data. [3] Based on averages for the 1947-49 and 1951 crop-years, solvent extraction yielded about 20 percent more oil per bushel of soybeans crushed than the screw-press process and 26 percent more than the hydraulic-press process. For cottonseed crushed during the 1951-52 season, the screw-press method recovered about 7 percent more oil than hydraulic presses, solvent extraction recovered 13 percent more, and prepress-solvent extraction, 20 percent more. For flaxseed crushed in 1951-52, the prepress-solvent method yielded about 5 percent more oil than the screw-press method. The superiority of solvent and prepress-solvent extraction in oil recovery is readily apparent.

Economic Factors Affected by Changes In Yield of Oil and Meal

Figure 1 presents a diagram of the economic factors that are affected by changes in the yield of soybean oil and meal. Each box in the diagram represents one or more of the economic variables involved. Arrows indicate the direction of the various influences. Boxes bound by dashed lines represent factors that logically belong in the diagram but upon which the effects of changes in yield could not be statistically measured.

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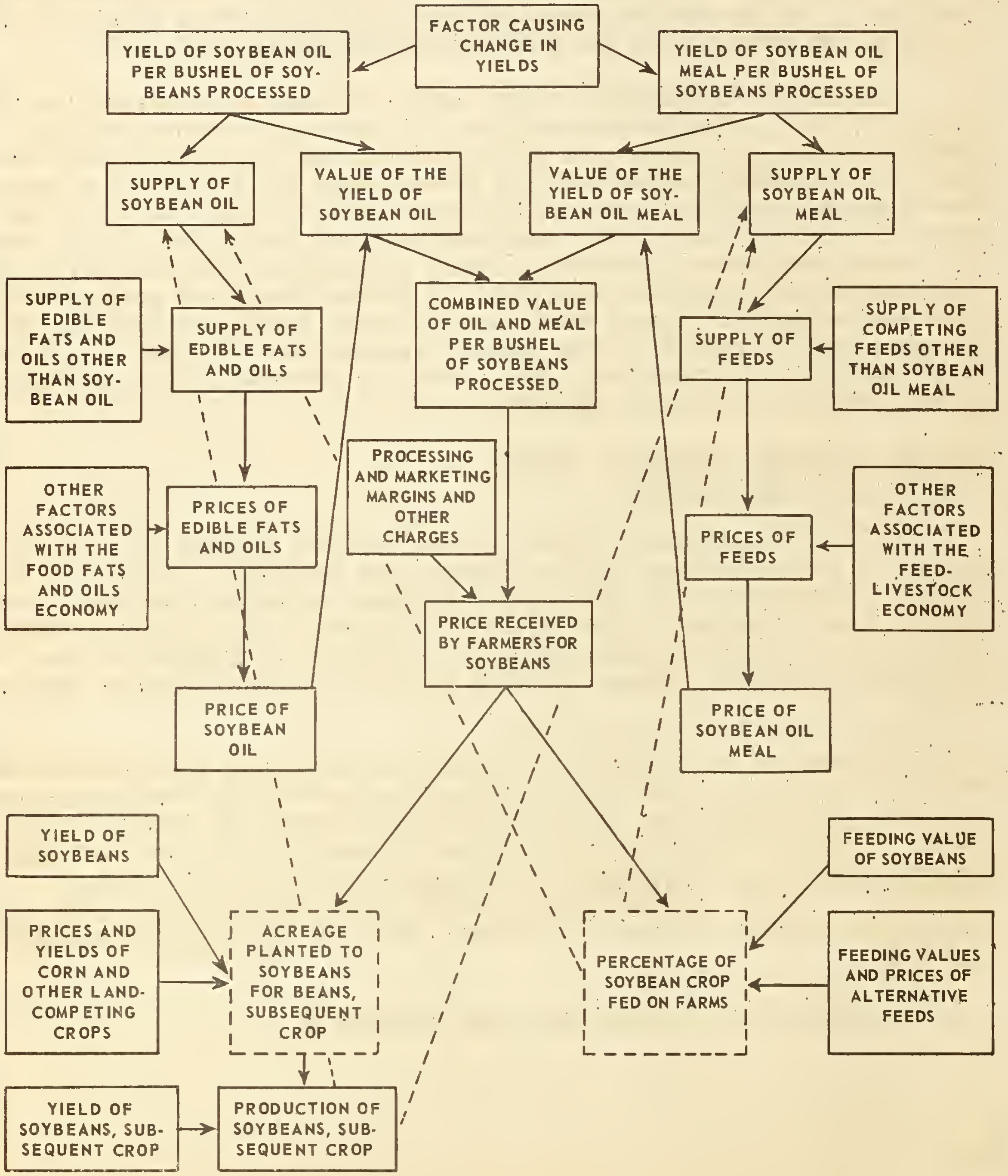
[2] The quantity of soybeans, flaxseed, and cottonseed processed and the crude oil produced by the various extraction methods for the 1951-52 season were published by the U. S. Production and Marketing Administration as U. S. Department of Agriculture Press Release 1038-53, entitled USDA Reports on Soybean, Cottonseed, and Flaxseed Processing for 1951-52, dated May 4, 1953. A brief discussion of these and additional data for soybean processing is given in the April-May 1953 Fats and Oils Situation, pp. 6-8.

[3] For the source of these data, see footnote 2.

ECONOMIC FACTORS AFFECTED BY CHANGES IN THE YIELD OF SOYBEAN OIL AND SOYBEAN OIL MEAL


FACTOR CAUSING CHANGE IN YIELDS
YIELD OF SOYBEAN OIL PER BUSHEL OF SOYBEANS PROCESSED
YIELD OF SOYBEAN OIL MEAL PER BUSHEL OF SOYBEANS PROCESSED
SUPPLY OF SOYBEAN OIL
VALUE OF THE YIELD OF SOYBEAN OIL
VALUE OF THE YIELD OF SOYBEAN OIL MEAL
SUPPLY OF SOYBEAN OIL MEAL
SUPPLY OF EDIBLE FATS AND OILS OTHER THAN SOYBEAN OIL
SUPPLY OF EDIBLE FATS AND OILS
COMBINED VALUE OF OIL AND MEAL PER BUSHEL OF SOYBEANS PROCESSED
SUPPLY OF FEEDS
SUPPLY OF COMPETING FEEDS OTHER THAN SOYBEAN OIL MEAL
OTHER FACTORS ASSOCIATED WITH THE FOOD FATS AND OILS ECONOMY
PRICES OF EDIBLE FATS AND OILS
PROCESSING AND MARKETING MARGINS AND OTHER CHARGES
PRICES OF FEEDS
OTHER FACTORS ASSOCIATED WITH THE FEED-LIVESTOCK ECONOMY
PRICE RECEIVED BY FARMERS FOR SOYBEANS
PRICE OF SOYBEAN OIL
PRICE OF SOYBEAN OIL MEAL
YIELD OF SOYBEANS
FEEDING VALUE OF SOYBEANS
PRICES AND YIELDS OF CORN AND OTHER LAND-COMPETING CROPS
ACREAGE PLANTED TO SOYBEANS FOR BEANS, SUBSEQUENT CROP
PERCENTAGE OF SOYBEAN CROP FED ON FARMS
FEEDING VALUES AND PRICES OF ALTERNATIVE FEEDS
YIELD OF SOYBEANS, SUBSEQUENT CROP
PRODUCTION OF SOYBEANS, SUBSEQUENT CROP

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This diagram may be used to show the way in which the effects of an increase in the yield of soybean oil resulting from a shift to more efficient processing equipment are likely to be transmitted and how the producer of soybeans is affected in the process. Except for certain characteristic differences (as will be pointed out in the case of cottonseed processing), the analysis implicit in the diagram may be applied, in a general way, to other oilseeds. 4/ For illustrative purposes, most of the discussion with respect to the diagram will be in terms of soybeans and soybean products.

An increase in the yield of soybean oil per bushel results in an increase in production of the oil. In almost every year since 1935 more than 80 percent of the soybean oil consumed domestically has gone into edible products. The price of soybean oil, therefore, is determined chiefly by the supply of and demand for edible fats and oils. As a high degree of interchangeability exists among the fats and oils that can be used in food products, users ordinarily are more interested in the total supply of edible fats and oils than in the supply of any individual fat or oil. Consequently, the economic effects of changes in the supply of soybean oil operate through the resulting changes in the total supply of fats and oils, other than butter and lard, used in food products. 5/

An increase in the total supply of these fats and oils would tend to reduce their prices, including that of soybean oil. 6/ Thus, under competitive conditions, a more efficient processing industry would benefit users by enabling them to buy the larger supply of oil at a lower price. The price-depressing effect of an increase in the supply of soybean oil would be cushioned because the percentage rise in the total supply of food fats and oils would be smaller than for soybean oil alone. However, this advantage to producers of soybeans would be reduced as processing methods resulting in increased yields of oil are adopted for other oilseeds. Other variables that affect the price of fats and oils, other than butter and lard, used in food products are discussed in Technical Bulletin No. 1068.

4/ A diagram of the economic factors that are affected by a change in the yield of cottonseed oil is shown on page 38 of Technical Bulletin No. 1068, cited previously. For a complete discussion relating to the soybean diagram, see Marketing Research Report No. 35, pp. 9-16.

5/ The principal fats and oils, other than butter and lard, used in food products include cottonseed, soybean, peanut, corn, olive, oleo, and coconut oils, tallow, oleostearine, and oleo stock. Reasons for the omission of butter and lard from this grouping are discussed in Technical Bulletin No. 1068.

6/ This relationship has been demonstrated statistically. For the analysis of the factors that affect prices of all food fats and oils (except butter and lard) and for the relation of prices of cottonseed oil to the group average, see Technical Bulletin No. 1068, pp. 27-33. The overall analysis was discussed briefly in the June-July 1953 Fats and Oils Situation, pp. 14-17. For the relation of prices of soybean oil to the group average, see Marketing Research Report No. 35, p. 30.

The price and yield of soybean oil together determine the value of the oil obtained from a bushel of soybeans. An increase in yield would tend to increase the value. This tendency, however, would be offset to some extent by the lower price for soybean oil that would result from the increase in supply.

The increase in the yield of soybean oil that results from the shift to more efficient processing equipment is accompanied by a decrease in the yield of soybean meal. It is estimated that, in the 1947-49 and 1951 crop-years, the solvent process yielded, on the average, about 4 percent less meal per bushel of soybeans crushed than the screw-press process and about 5 percent less than the hydraulic-press process. This results in a decreased production of soybean meal. In the case of cottonseed processing, an increase in the yield of oil resulting from improved processing methods would not affect the yield of meal, as this yield is regulated by mixing in additional quantities of hulls. 7/

Ordinarily more than 90 percent of the supply of soybean meal is used as livestock feed. Other uses are of minor importance from a price-influencing standpoint. Soybean meal competes in the market place primarily with other feeds containing a high percentage of protein. 8/ Consequently, in ascertaining the economic effects of a change in the supply of soybean meal, the resulting change in the supply of these feeds must be taken into account. A given percentage reduction in the supply of soybean meal represents a smaller percentage decrease in the total supply of competing feed concentrates. Hence, the price-increasing effect of such a reduction would be less than it would have been had soybean meal been without close substitutes.

The value of the soybean meal obtained from a bushel of soybeans is determined by yield and price. A reduction in yield tends to lower the value of the meal. Apparently, however, the lower yield of meal that would be associated with greater oil recovery would not have much of an upward effect on price. 9/ The net effect on the value of the meal, therefore, probably would be slightly downward. Moreover, the meal obtained by solvent extraction differs from that obtained by the mechanical processes in that it ordinarily contains a higher percentage of protein and a lower percentage of oil. At times, the mechanically processed meals, apparently largely because of their extra oil content, have commanded a premium over the solvent-extracted meal. Discounts on the solvent-extracted meal would partly offset the value of the higher yield of oil from the solvent process. 10/ Some solvent mills operating on cottonseed also have encountered occasional discounts on their meal.

7/ See Technical Bulletin No. 1068, p. 37. Of the four major products of cottonseed processing (oil, meal, linters, and hulls), the value of hulls is lowest. 8/ These feeds include primarily the oilseed meals, such as cottonseed, peanut, and linseed meal, and the animal proteins, such as tankage, meat scraps, and fish meal. 9/ See Marketing Research Report No. 35, pp. 25-26. 10/ See Marketing Research Report No. 35, pp. 20-23.

The values of the yields of soybean oil and meal together represent the value of the products obtained from processing a bushel of soybeans. Processors, in determining the prices they will offer for soybeans, are influenced to a large extent by their expectations concerning the combined value of the oil and meal obtained per bushel of soybeans processed. Hence, under stable competitive conditions, any changes in the average price and quantity of oil and meal obtained from the use of more efficient processing techniques would tend to be reflected in prices paid to farmers for soybeans. 11/

The adoption by industry of more efficient processing equipment also may cause changes in the average cost of crushing. The spread between the combined value of the oil and meal produced in processing and the price a farmer receives for a bushel of soybeans reflects various processing and marketing costs and profit margins. In addition, the spread is affected by the amount by which the expected value of soybean products differs from the value realized when the products are marketed.

Under competitive conditions a few firms would improve their competitive position by shifting from one type of mill to a more efficient type. Oil supply would be increased and prices lowered somewhat. But prices of the oilseed still would be determined chiefly by the purchasing power of remaining mills. If all mills were to shift to the most efficient type of processing for given seed supplies, the gains in efficiency would be passed on to the producer of the oilseed, on the one hand, and to the consumer of oil, on the other. If, however, almost all mills were to shift to the most efficient method of processing, the few mills retaining the less efficient type of equipment would be seriously squeezed between falling oil prices and rising seed costs. This situation has prevailed with respect to soybean processing during the past two seasons. 12/ However, even under this circumstance, many such mills would be able to continue to compete because they would have written off their investment cost over a period of years so that their net or marginal cost for processing equipment would involve only the cost of replacements and repairs. This advantage of older mills would disappear quickly as newer mills amortized their investment.

Thus, a change in the technical basis of the processing industry tends to affect the price received by farmers for oilseeds both by causing changes in the value of the products obtained in processing and in processing costs. This effect could be illustrated best by actual data. Unfortunately, data on the cost factors relating to the use of alternative soybean-processing plants are not available. However, tables 7 and 8 show estimated effects of industry-wide changes in type of cottonseed oil mills on the price of cottonseed received by farmers under alternative assumptions as to the size of the marginal mill. 13/

11/ In the past the price received by farmers for soybeans has been closely related to the value of the products of soybean processing. See Marketing Research Report No. 35, pp. 30-32. For a similar relationship for cottonseed, see Technical Bulletin No. 1068, p. 40. 12/ These developments were discussed in the September-October 1952 issue of the Fats and Oils Situation, pp. 10-15. 13/ These tables and most of the discussion relating to them were taken from Agriculture Information Bulletin No. 103, cited previously.

Data Relating to Cottonseed

Determination of the effects of industry-wide changes in type of cottonseed oil mills on the price of cottonseed received by farmers was resolved through approximating the marginal-size mill of the current industry and comparing its costs and revenues with those of marginal-size mills based on the use of alternative processing equipment. The marginal-size mill of an industry is defined as the smallest mill (1) whose services are required to enable the industry (under given cost-price relationships) to process the total crop of seed, and (2) whose annual crush is just large enough to enable the mill to make only enough revenue to meet total costs, including depreciation, interest on capital, taxes and insurance. The price paid to growers for cottonseed normally must be low enough to enable this marginal mill to cover its total costs.

Under the theoretical assumption of "perfect competition," it was calculated that the smallest mill of the current industry (which is predominantly hydraulic), capable of meeting its total costs, was a 4-press hydraulic mill with an annual crush of 6,000 tons. (Any larger mill would require a larger crush to meet all costs.) Its total (1949-50) revenue or cost per ton of seed was calculated at $73.51. Exclusive of seed, its costs were $28.26 per ton, leaving $42.25 available to the grower for seed after deducting a $3.00 charge for gin services. In considering a completely hydraulic industry, a minimum crush of 10,600 tons was assumed for the marginal mill because calculated net revenues were not regarded as warranting the construction of new mills of any type if less than this amount of seed was available. Shifting from the current industry to a complete hydraulic industry was calculated to increase the value of cottonseed by about 9 percent. In 1949-50 this was equivalent to $3.85 a ton. This compared with increases of approximately 12, 7 and 8 percent arising from similar shifts to the screw-press, direct-solvent, and prepress-solvent industries, respectively. (Data for 1949-50 were used in these computations because available cost data related to that year. Presumably the percentage relationships would be about the same for any other year.)

It should be noted that the shift from the current industry, which is predominately hydraulic, to a completely hydraulic industry with a marginal mill of 10,600-ton crush would not benefit consumers because it would leave the supply, and hence the price, of oil the same as before. All benefits from increased efficiencies that competition prevented the industry from retaining would tend to go to growers.

In contrast, an industry-wide shift to the prepress-solvent process, with the same size marginal mill, would reduce cottonseed oil prices by about 9 percent through increasing the supply of cottonseed oil by 10.8 percent and all edible oils (exclusive of butter and lard) by 5.4 percent. The benefit to growers from such a shift would be somewhat less than a shift to the more efficient type of hydraulic industry. For, even though the prepress-solvent industry increased oil yield by 42.2 pounds per ton of seed, this increase was calculated to lower the price of oil to a point where the total revenue of the marginal-size mill (10,600-ton crush) was only 95 cents more

Table 7.- Calculated effect of industry-wide changes in types of cottonseed oil mills on value of cottonseed sold by growers, 1949-50 cost-price relationships, mill area I

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Marginal-size mill			Product revenues per ton of seed--								Amount of money per ton available to cottonseed growers		
Type of mill	24-hour crushing capacity at normal operating rate	Length of operating season	Annual crush	Oil	Meal	Lint	Hulls	Total revenue of cost per ton of seed 1/	Cost per ton exclusive of seed cost f.o.b. gins	Amount of money available to pay for seed (Col. 8-Col. 9) 2/	Gin charges per ton of seed 3/	Total (Col. 10-Col. 11)	Additional	Increased returns to growers
	Tons	Mo.	Tons	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Pct.
Present (1949-50).....	40	6.8	6,000	35.60	26.50	8.00	3.41	73.51	28.26	45.25	3.00	42.25		0
Alternative types:														
Hydraulic..........	60	8.0	10,600	35.58	26.14	8.00	3.11	72.83	23.73	49.10	3.00	46.10	3.85	9.1
Screw press........	75	6.4	10,600	35.85	26.14	8.53	3.02	73.54	23.26	50.28	3.00	47.28	5.03	11.9
Direct solvent......	50	9.6	10,600	36.33	26.14	8.00	2.95	73.42	25.24	48.18	3.00	45.18	2.93	6.9
Prepress solvent....	80	6.0	10,600	36.73	26.14	8.00	2.91	73.78	25.23	48.55	3.00	45.55	3.30	7.8

1/ For marginal plants total costs are equivalent to total revenue. The net decrease in revenue and cost exclusive of seed is here included as an increased price of seed.

2/ Assuming conditions of stable competition, this amount would be spent for seed, as there is no other item in cottonseed processing for which cottonseed growers are the only source of supply and cottonseed oil mills the only bidders.

3/ This was the charge deemed equitable under the price support program.

Table 8.- Calculated effect on returns to cottonseed growers of shift from present industry with marginal-size mill of 6,000-ton annual crush to alternative industries with marginal-size mills of 42,200-ton annual crush, assuming stable competitive conditions, 1949-50 cost-price relationships, mill area I

	Marginal-size mill			Product revenues per ton of seed--								Amount of money per ton available to cottonseed growers		
Type of mill	24-hour crushing capacity at normal operating rate	Length of operating season	Annual crush	Oil	Meal	Lint	Hulls	Total revenue or cost per ton of seed 1/	Cost per ton exclusive of seed cost f.o.b. gins	Amount of money available to pay for seed 2/	Gin charges per ton of seed 3/	Total	Additional	Increased returns to growers
	Tons	Mo.	Tons	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Dol.	Pct.
Present (1949-50).....	40	6.8	6,000	35.60	26.50	8.00	3.41	73.51	28.26	45.25	3.00	42.25	0	0
Alternative types:														
Hydraulic..........	160	12.0	42,200	35.13	25.48	8.00	2.76	71.37	18.32	53.05	3.00	50.05	7.80	18.5
Screw press........	175	11.0	42,200	35.45	25.48	8.23	2.70	71.86	18.17	53.69	3.00	50.69	8.44	20.0
Direct solvent......	200	9.6	42,200	36.33	25.48	8.00	2.60	72.41	18.77	53.64	3.00	50.64	8.39	19.9
Prepress solvent....	160	12.0	42,200	36.25	25.48	8.00	2.57	72.30	18.60	53.70	3.00	50.70	8.45	20.0

1/ For marginal plants total costs are equivalent to total revenue. The net decrease in revenue and cost exclusive of seed is here included as an increased price of seed.

2/ Assuming conditions of stable competition, this amount would be spent for seed, as there is no other item in cottonseed processing for which cottonseed growers are the only source of supply and cottonseed oil mills the only bidders.

3/ This was the charge deemed equitable under the price support program.

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per ton of seed than that of the same size marginal hydraulic mill. But at this crush, costs, exclusive of seed, for the prepress-solvent mill were $1.50 more than for the hydraulic process. As a consequence, industry-wide change to the former would make available to the grower 55 cents less per ton of seed than a like shift to the hydraulic industry with the same size marginal mill. The same principle applies in a somewhat less degree to the direct-solvent process.

In contrast, an industry-wide shift to screw press mills with the same size (10,600-ton crush) marginal mill would benefit consumers somewhat, but it would benefit growers more than any other type of change. The reason for this is that screw-press costs, exclusive of seed, for a 10,600-ton crush are less than those for the same size hydraulic mill, while the value of its product is somewhat higher because of its greater oil yield.

It should be emphasized that the preceding conclusions rest on the assumption of alternative industries, each having a marginal mill of 10,600-ton crush, compared with the current industry's hydraulic marginal mill of 6,000-ton crush. The result would be different if substantially larger marginal mills, say with an annual crush of 40,000 tons, were used, provided the advent of such large mills did not do away with stable competitive conditions. With a crush of this size, a shift to the solvent process would be more beneficial to growers as well as to consumers. The reason is that, at large tonnages, differences between costs of prepress-solvent mills and those of hydraulic mills, exclusive of seed, are much less than at smaller tonnages, as illustrated in table 8.

It is apparent that an industry-wide shift to a more efficient type of cottonseed oil mill would tend to result in increased prices for cottonseed. But, except in the case of a shift to a completely hydraulic cottonseed processing industry, it would tend to result in lower prices and lower total returns from marketing other oilseeds, the products of which compete with those of cottonseed. An increase in the supply of cottonseed oil would tend to reduce prices of all food fats and oils, but the effects of the decline in price on value of the seed would be offset by increased yields of oil only for cottonseed.

However, in general more efficient methods of processing are not introduced on one type of oilseed only. As previously stated, almost three-fourths of the soybean crush during the 1951-52 season was processed by the solvent method. If the effect of an industry-wide shift to solvent extraction in soybean processing from the 1951-52 level on the supply of all edible fats and oils, for example, was considered in conjunction with those of industry-wide changes in the type of cottonseed oil mill, it is likely that the increase in returns to growers of cottonseed shown in table 7 would be reduced by about a third and in table 8, by about a seventh.

Summary and Conclusions

Methods of processing oilseeds which increase the yield of oil may result in increased profits to the processing industry, in lower costs to users of the oil, or in higher returns to farmers. Relative benefits to these three groups depend to a considerable extent on the time period considered, on the extent to which the new processing methods are adopted, and on the relation between the responsiveness of production to price on the one hand and of price to supply on the other. Once the new methods have been adopted by most of the industry, benefits usually go mainly to users and growers. In the long run both undoubtedly benefit by their adoption. In the early stages of the introduction of the new process, the advantage is more likely to go to the firms making the change because of the competitive advantage they gain.

From the detailed analysis given previously, it is apparent that producers of a given oilseed are likely to benefit from the industry-wide use of most efficient methods for processing that oilseed. As shown, returns to growers from cottonseed would be affected by (1) a change in the supply and value of oil resulting from an industry-wide change in type of cottonseed oil mill and (2) a change in costs of processing per ton, exclusive of seed, resulting from a change in type and size of marginal mill. Similar effects probably prevail for other oilseeds.

The effects of a shift to more efficient methods of processing in the entire oilseed crushing industry are more difficult to determine. In addition to the above, the extent of the gains to producers of any one oilseed would depend on the extent to which competitive conditions in the industry crushing that oilseed are changed and on the extent of shifts to improved methods of oil recovery in industries processing competing oilseeds.

Prices of cottonseed oil and cottonseed over the past several years probably have been depressed to some extent by the rapid expansion of solvent extraction in soybean processing. If solvent extraction is adopted by a substantial part of the cottonseed processing industry, this would tend to have some depressing effect on prices of soybeans. For example, an industry wide shift to the prepress-solvent method, as calculated in Agricultural Information Bulletin No. 103, would have increased the 1949-50 supply of edible fats and oils (except butter and lard) by 5.4 percent. Such an increase in supply would tend to reduce the price of soybean oil by 7.6 percent which, in turn, based on 1949-50 average prices and yields, would result in about a 3 percent decrease in the average price received by farmers for a bushel of soybeans.

Changes in prices to farmers probably would have greater effects on soybean production than on cottonseed output. Soybeans are produced mainly for the value of the oil and meal, while cottonseed is a byproduct of the cotton enterprise (it represents about 15 percent of the total value of the cotton crop) and output is not responsive to changes in price of the seed. In certain areas soybeans compete for land with crops such as corn and cotton. Hence, a permanent change in the value of soybeans in comparison with prices of competing crops might result in some change in acreage and production of soybeans. If prices of soybeans were lowered as a result of increased supplies of cottonseed oil, any resulting decline in soybean production would tend partly to offset the effect of the increase in the supply of cottonseed oil on prices of soybean oil, cottonseed oil, and other food fats and oils.

Table 9 .- Fats, oils, including margarine and shortening, and tall oil: Production from domestic and imported materials, and factory and warehouse stocks at end of month

Items grouped by major use	Production 1/				Stocks			
	1952	1953			June 30		1953	
	Jan.-June	Jan.-June	May	June	1951	1952	May 31	June 30
	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.
PRIMARY FATS AND OILS								
Food fats and oils								
Butter 2/	619.2	779.0	155.7	157.3	72.6	68.6	193.6	257.4
Lard and rendered pork fat 3/	1,395.2	1,129.0	151.0	150.0	124.3	214.7	200.6	169.3
Oleo oil, oleo stock, edible animal stearine, and edible tallow	92.9	4/119.2	24.8	4/20.0	8.3	9.1	11.5	11.6
Total edible animal fats	2,107.3	2,027.5	331.5	327.3	205.2	292.4	405.7	438.3
Corn oil	112.8	132.7	22.9	21.9	21.4	14.4	19.7	18.7
Cottonseed oil	769.9	860.0	95.4	74.5	216.4	460.0	1,001.1	991.7
Olive oil, edible	4.0	6.4	6/	---	22.5	8.8	5.2	4.5
Peanut oil	72.9	26.3	4.1	4.7	47.0	17.6	4.4	4.9
Soybean oil	1,268.1	1,278.0	226.3	190.1	221.1	296.4	291.7	273.2
Total edible vegetable oils	2,227.7	2,303.4	348.7	291.2	528.4	797.2	1,322.1	1,293.0
Soap fats and oils								
Tallow, inedible, and greases excluding wool grease 5/	1,171.3	4/1,349.4	229.8	4/220.0	299.5	332.3	394.3	391.7
Palm oil	---	---	---	---	18.4	31.9	19.5	18.9
Fish oil	33.4	34.8	8.7	22.2	39.4	42.4	35.0	36.1
Whale and seal oils	---	---	---	---	---	.2	.4	.4
Olive oil, inedible and foots	6/	---	---	---	6.0	4.0	2.6	2.4
Coconut oil	201.5	204.5	32.3	37.6	102.8	64.3	47.4	48.8
Total soap fats	1,406.2	1,588.7	270.8	279.8	466.1	475.1	499.2	498.3
Drying oils								
Castor oil, dehydrated	7.7	9.3	1.5	1.5	9.4	4.6	4.3	4.5
Linseed oil	261.2	222.8	24.5	32.0	678.8	674.6	631.6	619.0
Oiticica oil	---	---	---	---	7.9	4.8	2.6	2.0
Tung oil	9.9	29.4	2.2	6/	29.0	13.8	27.2	25.1
Total drying oils	278.8	261.5	28.2	33.5	725.1	697.8	665.7	650.6
Other industrial oils and fats								
Neat's-foot oil	1.0	1.1	.2	.2	1.2	1.0	.9	1.2
Sperm-oil	---	---	---	---	33.0	23.0	7.7	7.2
Wool grease	3.8	5.2	.9	1.0	.4	.4	1.0	1.3
Cod oil and fish-liver oils	.8	.4	8/	.1	8.7	6.0	5.1	4.5
Castor oil, No.1 and No.3 7/	30.8	27.4	3.3	4.0	41.5	22.4	34.8	38.0
Rapeseed oil	8/	---	---	---	3.3	2.1	2.9	3.0
Other vegetable oils	6.8	14.8	2.8	3.0	22.3	11.6	33.2	29.5
Total	43.2	48.9	7.2	8.3	110.4	66.5	85.6	84.7
Grand total 9/	10/6,312.4	10/6,479.7	986.4	940.1	2,035.1	2,329.1	2,978.4	2,964.8
From domestic materials	10/6,069.4	10/6,234.7	948.7	896.5				
From imported materials	243.0	245.0	37.7	43.6				
FAT-AND-OIL PRODUCTS								
Margarine ------ Colored	569.6	604.9	84.5	99.0	9.6	15.9	14.3	13.7
Uncolored	82.2	35.6	5.4	4.2	3.8	2.6	1.6	1.5
Total	651.9	640.5	89.9	103.2	13.4	18.5	16.0	15.2
Shortening	797.1	780.9	118.2	106.8	140.6	81.9	127.9	126.5
Tall oil	161.2	165.8	30.8	25.3	65.3	85.3	85.4	83.2

1/ Factory production except as otherwise noted.

2/ Creamery butter production and cold-storage stocks, United States Department of Agriculture.

3/ Total commercial. Excludes farm production. Federally inspected in January-June 1952 totaled 1,200.2 million pounds, January-June 1953 totaled 961.6 million pounds.

4/ Estimated for June.

5/ Total apparent production, Bureau of Agricultural Economics. (Computed from factory consumption, trade and stocks.)

6/ Included in "Other vegetable oils."

7/ Production of No. 1 and No. 3 minus production of dehydrated castor oil.

8/ Less than 50,000 pounds.

9/ Computed from unrounded numbers.

10/ Includes estimated output of farm butter and farm lard, 249.2 million pounds in January-June 1952; 249.7 million pounds in January-June 1953.

Compiled from reports of the Bureau of the Census, except as noted. Data include stocks held by the Government in reported position.

Table 10.- Imports and exports of fats, oils, oil-bearing materials and fat-and-oil products in terms of oil

Item	Imports for consumption				Exports 1/			
	1952	1953			1952	1953		
	Jan.-May	Jan.-May	April	May	Jan.-May	Jan.-May	April	May
	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.	Mil.lb.
Food fats and oils								
Butter	2/	2/	---	---	.6	.2	2/	2/
Lard	.1	2/	2/	---	374.4	211.1	40.7	33.8
Oleo oil	---	---	---	---	1.8	4.4	.8	.7
Oleo stock	---	---	---	---	11.2	9.4	3.6	3.3
Stearine, animal, edible	2/	---	---	---	.5	.9	.3	.1
Tallow, edible	2/	2/	---	2/	3.1	5.1	1.6	1.0
Total, edible animal fats	.1	2/	2/	2/	391.6	231.1	47.0	38.9
Cottonseed oil	---	2/	---	---	65.0	28.7	5.4	5.3
Cottonseed (15.5 percent)	---	---	---	---	2.8	3.2	.3	.2
Olive oil, edible	15.4	17.2	2.8	3.2	---	---	---	---
Peanut oil	---	2/	---	---	12.3	.4	2/	.1
Peanuts, shelled (43 percent)	---	---	---	---	---	---	---	---
Soybean oil	2/	---	---	---	110.2	14.9	2.5	3.5
Soybeans (16.7 percent) 3/	2/	2/	2/	2/	62.2	119.5	18.0	27.4
Stearine, vegetable oil, winter	---	---	---	---	.2	.7	.1	.2
Other vegetable oils	2.7	3.4	.6	.5	15.7	14.1	2.4	4.5
Total, edible vegetable oils	18.1	20.6	3.4	3.7	268.4	181.5	28.7	41.2
Soap fats and oils								
Fish and fish liver oils non-medicinal	8.4	2.9	.2	.8	12.1	35.3	11.0	1.3
Greases	.3	2/	---	---	46.1	62.6	15.0	15.7
Marine mammal oils	20.0	9.3	.9	1.8	2/	.1	.1	2/
Foots and soap stock, including olive oil	.1	.1	2/	2/	1.4	3.5	.7	2/
Palm oil	38.6	18.2	5.6	5.8	4/	4/	4/	4/
Tallow, inedible	.2	2/	---	---	282.1	378.8	88.5	81.8
Total, slow-lathering oils	67.6	30.5	6.7	8.4	341.7	480.3	115.3	98.8
Babassu oil	1.9	---	---	---	---	---	---	---
Babassu kernels (63 percent)	---	---	---	---	---	---	---	---
Coconut oil	28.1	54.1	19.0	9.9	20.2	5.9	.7	.8
Copra (63 percent)	179.3	167.6	48.5	23.8	---	---	---	---
Palm kernel oil	2.4	28.5	7.9	4.7	---	---	---	---
Tucum kernels (43 percent)	.2	2/	---	2/	---	---	---	---
Total, lauric-acid oils	211.9	250.2	75.4	38.4	20.2	5.9	.7	.8
Drying oils								
Flaxseed (35.4 percent)	2/	2/	2/	2/	25.7	.2	2/	2/
Linseed oil	2/	2/	---	---	16.8	.8	.1	.2
Oiticica oil	2.4	3.3	1.1	.9	---	---	---	---
Tung oil	10.5	3.4	1.4	1.5	.9	.2	---	2/
Total	12.9	6.7	2.5	2.4	43.4	1.2	.1	.2
Other industrial oils and fats								
Cashew nut shell liquid (oil)	1.7	4.0	.5	.4	---	---	---	---
Castor oil	43.8	61.4	15.0	18.3	.3	.2	2/	2/
Castor beans (45 percent)	29.8	26.9	4.6	3.2	---	---	---	---
Fish-liver oils, medicinal	10.4	9.2	1.7	1.4	.1	.1	2/	2/
Neat's-foot oil and stock	2/	.3	.1	.1	.1	.1	2/	2/
Rapeseed oil	2.5	3.4	2.3	.1	---	---	---	---
Wool grease	2.0	5.3	1.6	.7	---	---	---	---
Other vegetable oils and fats, inedible	.2	2/	2/	2/	3.0	5.1	.8	.7
Total	90.4	110.5	25.8	24.2	3.5	5.5	.8	.7
Other products (fat content)								
Margarine 5/	2/	---	---	---	.9	1.0	.2	.1
Shortening	2/	---	---	---	2.8	2.9	.7	.6
Cooking and salad oils	---	---	---	---	2.6	.5	2/	.2
Salad products 6/	---	---	---	---	.8	.8	.1	.2
Soap	.2	.3	.1	2/	9.9	7.3	1.4	1.7
Fatty acids	2.1	1.7	.7	2/	17.8	11.7	2.3	2.4
Total	2.3	2.0	.8	2/	34.8	24.2	4.7	5.2
Grand total 7/	403.3	420.8	114.7	77.1	1,104.0	929.9	197.3	186.2
Tall oil	---	---	---	---	14.9	18.7	3.5	6.6

1/ Includes re-exports of coconut, palm, and tung oils, olive-oil foots and copra. Does not include shipments.

2/ Less than 50,000 pounds.

3/ From 1950 through September 1952, 16.3 percent.

4/ Not reported separately.

5/ Imported margarine goes largely to Puerto Rico and the Virgin Islands.

6/ Includes mayonnaise and salad dressing.

7/ Computed from unrounded numbers.

Compiled from reports of the Bureau of the Census, and United States Department of Agriculture.

Table 11.- Index numbers of wholesale prices of fats and oils

Item	1947-49=100				
	July		1953		
	1951	1952	May	June	July
All fats and oils	84	78	75	74	73
All fats and oils, except butter	73	58	60	58	56
Grouped by origin:					
Animal fats	89	87	77	76	77
Vegetable oils, domestic	70	60	68	65	60
Vegetable oils, foreign	88	77	89	85	86
Grouped by use:					
Butter	98	105	94	94	94
Butter, seasonally adjusted	105	112	102	102	100
Lard	85	55	58	53	65
Food fats other than butter	74	60	69	67	62
Food fats other than butter and lard	74	60	69	68	62
All edible fats and oils	89	88	85	84	83
Soap fats	64	45	46	42	43
Drying oils	85	81	74	71	68
Other industrial	81	59	55	52	51
All industrial	71	56	54	51	51
Edible vegetable oils, grouped by degree of processing:					
Crude	73	60	70	68	63
Refined	79	70	80	80	78
End products	92	79	86	85	84

All indexes except "Butter, seasonally adjusted" and "Other industrial" from Bureau of Labor Statistics.

Table 12.- Price received by farmers and prices at terminal markets for specified oil-bearing materials and oilmeals

Item	Unit	July		1953		
		1951	1952	May	June	July
		Dollars	Dollars	Dollars	Dollars	Dollars
Castor beans, Brazilian ports	Long ton	225.00	180.00	159.00	142.50	140.00
Copra, Philippines, c.i.f. Pacific Coast	Short ton	166.25	131.88	205.50	191.25	186.50
Cottonseed, United States average	Short ton	78.00	71.00	61.80	61.20	59.00
Flaxseed, No. 1, Minneapolis	Bushel	3.42	4.02	3.76	3.65	3.48
Flaxseed, United States average	Bushel	3.19	3.68	3.45	3.33	3.17
Peanuts, No. 1, shelled, Spanish, Southeastern shipping points*	100 lb.	17.25	21.25	20.25	20.12	20.25
Peanuts, United States average	100 lb.	10.80	10.30	11.20	11.10	11.10
Soybeans, No. 2, Yellow, Chicago	Bushel	3.02	3.28	2.91	2.82	2.69
Soybeans, No. 2, Yellow, Illinois country shipping points	Bushel	2.94	3.22	2.87	2.76	2.56
Soybeans, United States average	Bushel	2.86	3.00	2.78	2.66	2.44
		Oilseed Meals 1/				
Copra meal, Los Angeles 2/	Short ton	70.75	91.80	84.85	79.75	75.90
Cottonseed meal, 41 percent protein, Memphis.	Short ton	73.70	92.50	61.62	61.60	60.75
Cottonseed meal, 41 percent protein, Chicago.	Short ton	83.55	---	71.40	72.05	73.05
Linseed meal, 36 percent protein, Minneapolis 3/	Short ton	59.90	78.00	68.10	64.00	61.90
Linseed meal, 34 percent protein, New York	Short ton	74.10	93.65	85.85	81.30	79.50
Peanut meal, 45 percent protein, f.o.b. Southeastern mills	Short ton	70.45	91.10	67.30	66.45	66.00
Soybean meal, 44 percent protein, Chicago 4/.	Short ton	80.50	94.70	79.60	78.50	76.40
Soybean meal, 44 percent protein, bulk, Decatur 4/	Short ton	68.80	93.10	66.75	65.90	65.25

1/ Bagged carlots, except soybean meal at Decatur, which is bulk. 2/ Original quotations adjusted to bagged-carlots basis. 3/ 34 percent prior to July 1950. 4/ 41 percent prior to July 1950.

* This price applies to peanuts for edible uses.

Compiled from Oil, Paint, and Drug Reporter, Daily Market Record (Minneapolis), Wall Street Journal, Chicago edition, reports of the Bureau of Agricultural Economics, and records of Production and Marketing Administration.

The following two reports, issued recently by the Production and Marketing Administration, may be of interest to readers of the Fats and Oils Situation:

(1) Agriculture Information Bulletin No. 103 by John M. Brewster, entitled Cottonseed Oil Mills: Their Comparative Efficiencies and Effects on Prices and Producer's Returns

(2) Marketing Research Report No. 46, by Morris W. Sills, and Harry O Doty, Jr., entitled Detergents, Emulsifiers, and Emulsion Products as Market Outlets for Fats and Oils

Copies may be obtained by writing to the following address:

Information Services Office
Production and Marketing Administration
U. S. Department of Agriculture
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